CLAIMS:

1. A method of making a component of an orthopaedic joint prosthesis which has a bearing surface whose shape corresponds approximately to a part of a sphere and is symmetrical about its polar axis, the method making use of a cutting tool which has a circular cutting edge and which can be rotated about an axis which is perpendicular to the plane containing the said cutting edge, and comprising the steps of:

a. rotating the component about its polar axis and rotating the cutting tool about its axis, with the cutting edge of the cutting tool in contact with the surface of the component, and

b. moving the cutting tool (i) in a direction parallel to the polar axis of the component while leaving the angle between the axis of the cutting tool and the polar axis of the component unchanged, and (ii) along its axis, and

c. repeating step (a),

the movements (i) and (ii) of the cutting tool causing the radius of curvature of the bearing surface to change continuously and monotonically as the angle between the radius and the polar axis of the component changes, so that the shape of the bearing surface deviates from that of a true sphere in such a way that discontinuities in the shape of the bearing surface as a result of individual movements are minimised.

2. A method as claimed in claim 1, in which the cutting tool is moved along its axis in a direction towards the bearing surface of the component, as the cutting tool is moved along the polar axis in a direction away from the bearing surface of the component.

3. A method as claimed in claim 1, in which the bearing surface of the component is concave.

4. A method as claimed in claim 1, in which the bearing surface of the component is convex, and in which the cutting tool is annular so that it has a circular cutting edge which can be applied against the convex bearing surface.

5. A method as claimed in claim 1, in which the simultaneous movements of the cutting tool along its axis, and in a direction parallel to the polar axis of the component, are performed in incremental steps.

6. A method as claimed in claim 5, in which the portion of the bearing surface which is defined by the cutting tool between any pair of consecutive incremental movements thereof extends through an angle of arc of at least about 1°.

7. A method as claimed in claim 5, in which the portion of the bearing surface which is defined by the cutting tool between any pair of consecutive incremental movements thereof extends through an angle of arc of not more than about 20°.

8. A method as claimed in claim 1, in which the bearing surface of the finished component includes a portion at and around the pole over which the radius of curvature is approximately constant.

9. A method as claimed in claim 8, in which the portion of the bearing surface over which the radius of curvature is approximately constant extends over a cone half angle of at least about 10°.

10. A method as claimed in any one of the preceding claims, which includes the step of sterilising the component so that it is suitable for implantation in a human or animal body as a component of an orthopaedic joint prosthesis.